

Hot Springs National Park, Bathhouse Row:
Lamar Bathhouse: Mechanical & Piping Systems
One mile North of US Highway 70
on State Highway 7
Hot Springs National Park
Garland County
Arkansas

HAER No. AR-4-H

HAER
ARK,
26-HOSP,
3-H-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD

HOT SPRINGS NATIONAL PARK, BATHHOUSE ROW:
LAMAR BATHHOUSE: MECHANICAL AND PIPING SYSTEMS

HAER NO. AR-4-H

Location: Hot Springs National Park, Garland County,
Arkansas. One mile north of US Highway 70
on State Highway 7 (Central Avenue).

Date of Construction: 1923

Present Owner: National Park Service

Present Use: Presently vacant.

Significance: The Lamar Bathhouse is part of Bathhouse
Row, which represents a typical American
Spa. The spring piping, heating and
ventilation systems are examples of early
twentieth century state-of-the-art
technology.

Historian: Diana Prideaux-Brune
August 1987

[See HAER No. AR-4 for an overview history of Bathhouse Row.]

[See HABS No. AR-28 (A through I) for documentation of the architectural
features of the bathhouses on Bathhouse Row.]

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The Lamar Bathhouse exhibits the most complete original heating system remaining on Bathhouse Row. Outside air passed through tempering coils and a by-pass with automatic dampers. Two 32-inch diameter blowers forced the air through the heating coils and a by-pass. The blowers were of 16,000 cubic-feet-per-minute capacity. The air-exhaust registers in each zone were equipped with louvers and directed vitiated air to the roof.

Automatic mixing dampers at the base of the heating ducts were controlled by pneumatic draft regulators and thermostats. In the Lamar, the pneumatic tubing is clearly evident, and appears to be made of pentagonal extruded lead tubing. In the plenum are found a number of good examples of original draft regulators still connected to both tubing and mixing dampers.

The dampers were monitored with a unique system of rubber balls. Strings were passed through holes drilled into the sheet metal wall of the plenum chamber, each string attached to a damper. Outside the plenum, a half rubber ball was tied to the end of each string. By observing the relative position of each ball, the engineer was able, at a glance, to estimate the damper position, and make any manual adjustments that might be necessary.

A single cast iron sectional boiler remains from the original two-boiler system. Both were equipped with gas burners. The boilers supplied steam to the tempering and heating coils, and to the radiators. Of a hospital-loop configuration, all radiators were controlled by pneumatic thermostats, with the exception of those in the basement, corridors, and hot rooms.

MECHANICAL EQUIPMENT INVENTORY

BOILER:

A 6 1/2 foot tall sectional boiler of cast iron, the unit is one of two originally installed. The boiler is gas fired. Headers direct the steam to the direct radiant system and to coils in the blower.

United States Radiator Corp.
Electric Diaphragm Gas Valve
Minneapolis-Honeywell
Model #: V518C x 2x2

CONDENSATE RETURN:

A vacuum system returns condensate from the heating coils and radiators into the boiler. The system is monitored by a pressure gauge and glass water level gauge. The condensate is pumped through a vacuum tank, air eliminator, and settling chamber before returning to the boiler.

Nash Engineering Co., So. Norwalk, CN
serial #: 3249
General Electric induction motor
2 HP

BLOWER:

The blower chamber and plenum are constructed of sheet metal on a concrete foundation. Blower of squirrel-cage type, 32-inch diameter. First patent: 1900. Tempered and heated air is directed by sheet-metal dividers within the blower chamber and plenum. The blower forces heated air to the various zones of the building.

TEMPERATURE CONTROL:

The pneumatic system controls the dampers of the forced air system, and all radiators with the exception of those in the basement, corridors, and hot room. The compressor pump for the system is not evident.

Johnson Pneumatic Controls

RADIATORS:

Radiators with two pipes for condensate return and steam supply are used. All radiators are equipped with a valves to control steam flow. Both ceiling and floor mounted units are used.

Johnson Diaphragm Valves

LAUNDRY:

Washing Machines:

Huebsch Washers

serial #: 516,696
37x18

Spinners:

Chicago Dryer Co

Coffield and Moore Manufacturing Co., Little Rock, AR

Dryers:

Huebsch Dryers

130,000 BTU/HR
60 cycle, 3 phase, 220 volt

Water Heater:

Arkansas Foundry Company

THERMAL WATER FLOW METER: Hays-Cochrane flow meter

[See HAER No. AR-4 for bibliography.]